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ABSTRACT

The Gateway Writing Project (GWP) at the University of Misouri-Saint Louis is described in this report. It is the St. Louis site of the National Writing Project founded at the University of California, Berkeley to meet the critical need for highly skilled teachers of writing. GWP has helped students at all levels learn to write by providng specialized training for their teachers. From 1984 to 1987, it developed a model integrating computers into a program of staff development, action research, and support for instructional change in writing. Staff development has consisted of summer institutes for teachers, 1-day seminars for administrators, and a variety of credit courses and noncredit workshops. Action research has included case studies, text analyses, and participant observation in the classrooms of trained teachers. Support has focused on four pilot schools where teachers and administrators formed writing improvement teams. The project's impact has been far-reaching and rapid, including five curriculum guides to teaching writing with computers, dozens of articles, and program replication at an inner-city teacher's college. Information has been shared with educators statewide and internationally. Because of this project, the university can now offer valid, classroom based information to schools and teachers planning computer equipped writing programs. A list of selected Gateway Writing Project publications and materials is appended. Contains 7 references. (SM)

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COMPOSING, COMPUTERS, AND CONTEXTS

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AASCU/ERIC Model Programs Inventory Project

The AASCU/ERIC Model Programs Inventory is a two-year project seeking to establish and test a model system for collecting and disseminating information on model programs at AASCU-member institutions--375 of the public four-year colleges and universities in the United States.

The four objectives of the project are:

- To increase the information on model programs available to all institutions through the ERIC system
- To encourage the use of the ERIC system by AASCU institutions
- To improve AASCU's ability to know about, and share information on, activities at member institutions, and
- To test a model for collaboration with ERIC that other national organizations might adopt.

The AASCU/ERIC Model Programs Inventory Project is funded with a grant from the Fund for the Improvement of Postsecondary Education to the American Association of State Colleges and Universities, in collaboration with the ERIC Clearinghouse on Higher Education at The George Washington University.

ABSTRACT

Since 1978, the Gateway Writing Project (GWP) has helped elementary, secondary, and college students learn to write by providing specialized training for their teachers. From 1984 to 1987, GWP developed a model integrating computers into a program of staff development, action research, and support for instructional change in writing. Each of the three components requires collaboration between college faculty and K - 12 teachers who are fellow learners, writers, and researchers.

Staff development has consisted of summer institutes for teachers, one-day seminars for administrators, and a variety of credit courses and noncredit workshops. Action research has included case studies, text analyses, and participant observation in the classrooms of trained teachers. Support has focused on four pilot schools where teachers and administrators formed "writing improvement teams."

Because of this project, we are now able to offer valid, classroom-based information to schools and to teachers planning computer-equipped writing programs.

INTRODUCTION

The Gateway Writing Project helps elementary, secondary, and college students learn to write by providing specialized training for their teachers. From 1984 to 1987, with the support of the Fund for Improvement of Postsecondary Education, GWP developed a model integrating computers into a program of staff development, action research, and support for instructional change in writing. Each of the three components requires collaboration between college faculty and K - 12 teachers who are fellow learners, writers, and researchers.

Staff development has consisted of summer institutes for teachers, one-day seminars for administrators, and a variety of credit courses and noncredit workshops. Action research has included case studies, text analyses, and participant observation in the classrooms of trained teachers. Support has focused on four pilot schools where teachers and administrators formed "writing improvement teams." The three components create and system of continuous feedback.

The experience of the past three years has confirmed the importance of our teacher-centered, school-centered plan. We are convinced that the computer is not a treatment or a quick-fix for the nation's writing problems. In addition, we see more clearly the complexity of planning computer-enriched writing programs. Issues of space, time, access, and equity proved greater than we had anticipated. An individual classroom teacher is much more autonomous when teaching writing with pen and paper--tools available anywhere--than when teaching with the myriad constraints of software, lab schedules, and after-school access to writing tools.

This report will analyze the three components and their results and offer some recommendations for further work with computers and writing process instruction.

BACKGROUND AND PURPOSE

Since 1978, the Gateway Writing Project had been offering summer institutes for teachers following the model successfully developed by the National Writing Project. By 1984, the explosion of microcomputers in the schools had created the need for a new kind of training, one for which no model existed. We wanted to integrate computers into our approach to staff development in a way that retained our emphasis on the direct experience of writing. We wanted to help teachers use computers, but we did not want computer literacy to become the focus of the course. We also wanted to retain the National Writing Project's emphasis on teachers teaching teachers.

To accomplish these goals, we decided on a plan of collaborative action research with the strongest graduates of previous years' writing projects. We would invite them back to the university for a second summer institute--introducing them to computers and to the new research on word processing and writing. Then we would work closely with them during the next school year as they tried out various approaches to using computers in their process-oriented writing classrooms. In this way, the experiences of our teacher/ researchers would be applied in fine-tuning our model for future staff development.

We suspected that effective computer-assisted writing programs would involve systemic as well as instructional changes. We planned, therefore, to provide seminars for school administrators and to encourage the development of "writing improvement teams" consisting of project-trained teachers, administrators, and such resource people as computer coordinators or librarians. We would identify several pilot schools where we could follow such teams and learn more about the impact of computers on each school's approach to literacy.

DESCRIPTION

The Gateway Writing Project is the St. Louis site of the National Writing Project (NWP), which was founded at University of California/ Berkeley in 1974 to meet the critical need for highly-skilled teachers of writing. Today the NWP includes over 160 sites in 47 states, each representing a partnership between higher education and local schools.

Starting in 1978 under a Missouri Title IV-C grant, the Gateway Writing Project provided advanced training for about 100 teachers from area schools. Several years of minimal or nonexistent funding followed, as the director and the trained teachers kept the project alive through publications and school-sponsored workshops. Then Gateway received a small grant from the National Writing Project matched by the University to begin working with computers in the writing process. This support, and the subsequent major FIPSE grant, made it possible to institutionalize the project at the university and to secure its future as a community resource.

During the FIPSE years, the Gateway Writing Project integrated computers into a three-pronged model of staff development, action research, and support for instructional change in writing.

Staff Development

Our first component, teaching teachers, is based on typical practice at National Writing Project sites. We offer intensive summer institutes to experienced teachers admitted on a

competitive basis, university courses open also to preservice teachers, and shorter inservice workshops led by project-trained teachers in the school districts (Flinn & Madigan, "Gateway").

Summer Institutes: Since 1984, we have focused the summer invitational institutes on "Teaching Writing with Computers." Offered for 5 semester hours graduate credit, these institutes provide a cadre of teacher/consultants with the training and confidence to staff the noncredit inservice workshops.

At least one university professor and one Gateway-trained teacher/consultant from the public schools form the core staff for the summer institute. Support staff may include a student aide, guest teacher/consultants, graduate interns or researchers, and faculty visiting from prospective NWP sites. Such diverse staffing tacitly suggests the importance of collaborative learning and teaching.

Planning for the summer institute aims for high visibility and high commitment. In February, we circulate flyers and send personal letters to public and private school administrators seeking nominations of excellent writing teachers. In April, we screen applications. Candidates receive a welcome letter and an initial reading and response assignment to bring to the institute in late June.

Our program still follows a plan typical of the National Writing Project. The institute runs four weeks, 9 - 3, Monday through Friday. Morning is primarily class time; afternoon is writing time. In the morning, teachers share reading responses, discuss their students' and their own writing processes, present model lessons, see software and teaching demonstrations on a large monitor, and do prewriting for the assigned papers -- sometimes by hand, sometimes by machine. In the afternoon, teachers browse through the GWP reserve collection in the library, meet with peers for feedback on their drafts, and write in the lab. Staff may be helping at the computers or conferring with writers or groups.

Participants compose, save, and print two major papers--a personal experience piece (narrative, poetry, memoir, letters) published informally for the group, and a curriculum article published and disseminated by the project.

Except for the first day when we explain how to handle a disk and save a file, the focus is on writing. Computers are taught at need-to-know points. For example, the advanced layout commands (blocks, headings indented at various levels) are introduced with the curriculum paper to create a formal, published appearance.

We also try to show teachers how to manage a computer-

assisted classroom through multiple sources of information. We encourage those who are already computer-literate to help, but warn tutors not to take over the keyboard or the thinking for the novice. Later, most teacher/consultants will apply a similar approach when they use peer tutors in their own labs.

Inservice Workshops: In addition to the summer invitational institute, we offer a variety of inservice workshops in the schools. When administrators contact the Gateway Writing Project to request teacher-training, most often they are thinking of a brief introduction to word processing with a few techniques for teaching writing. Our task is to convince this audience that they really need a more thorough, more integrated experience, and to design workshops that contain the key features of the summer institute in the shortest meaningful time.

Our most frequent solution is a noncredit, 10-15 contact hour inservice suitable for teachers from all subject areas. Led by GWP teacher/consultants, it presents a process approach to teaching writing on the district's standard word processor. Here is a sample syllabus:

Day One: Personal experience assignment (brainstorming, quickwriting, and other planning activities). Introduction to hardware and software (writing multiple leads for the paper). Homework (completing rough draft, reading and responding to journal articles).

Day Two: Peer feedback on drafts and on journal responses. Rubrics to guide revisions. During the session and in an open lab, participants type a second draft on the computers.

Day Three: Peer response and further revision, printing of final copies. More reading and journal response. Teachers discuss their own composing processes, and compare the experience of writing by hand and by machine.

Day Four: Distribution of letter-quality class anthology. Survey of approaches to using computers in classrooms, including ice-breaking activities such as collaborative writing.

We regard these brief workshops as appetite-whetters rather than full training experiences. Each summer, some graduates of the inservice programs apply to the invitational institute. Yet most teachers, unfortunately, get no further training. This seems adequate for teachers with prior knowledge of the writing process, and for those in schools with strong teacher/consultants and writing-oriented administrators for support.

Action Research

The Gateway Writing Project's second component, action

research, encompasses studies in which the practical needs of participants generate the research questions using descriptive ethnography (L. Smith, "Evolving Logic"). Action research provides a focus for teachers to continue learning, growing, inquiring, publishing after they leave the intensive summer course. This blend of training and research is ideal for a project like ours. We are working with teachers on rapidly-changing computer technology where researchers cannot pretend to have all the answers and where even the right questions may become apparent only in the classroom. Two major studies have been completed.

I Teacher Research on Learning Environments: The first study asked how highly-skilled writing teachers would restructure their classes to make use of the computer. We were not interested in randomly-selected teachers or in an experimentally-controlled curriculum. Instead, we collaborated with ten outstanding Gateway graduates who received fellowships from the National Writing Project to serve as teacher-researchers.

During 1984-85, they documented what happened to their teaching, keeping writing folders for a target class, and writing fieldnotes of assignments, problems, successes, and student response (Flinn, "Tales"). In subsequent years, project teachers at the pilot schools maintained similar records and discussed their observations with staff during our site visits.

Project co-director Anne Wright summarized the instructional changes she and other teacher-researchers observed as computers were integrated into the writing process ("Teaching Writing"):

1. Teachers using computers to teach writing become more flexible.

2. Teachers learn how to use computers for their own work.

3. Teachers require students to do more revising.

4. Student attitudes toward writing and revising become more positive; this affects the way the teacher teaches and the quality of student writing.

5. The writing process becomes more public since much of the drafting is done in class time. At the same time, the peer editing process becomes more spontaneous and more independent.

6. In addition to having students do word processing, teachers often learn to use the computer as a tool for instruction and demonstration.

7. As teachers gain experience, they discover that students need little direct computer instruction to start writing.

8. Students spend more time on task at the computer than in the regular classroom; thus the teacher has more opportunities for informal, individual writing instruction.

9. Access to computers determines to a great extent whether students like writing with them.

These observations have been extremely helpful to newly-trained teachers as they plan for computer-equipped writing classes.

If we were to highlight a single factor that emerged in this first action research project it would be the learning environment. The physical layout, accessibility, and scheduling of computers are crucial to the success of a writing program. We identified four settings which could be recommended:

First, a traditional classroom may use a single computer linked to a large monitor to demonstrate writing processes. Second, an open classroom can use one or two computers as a writing center for flexible, rotating access. Third, a schoolwide tutorial writing center may support writing across the curriculum. Finally, a computer lab, usually staffed by an aide, may serve writing classes; in this case the lab should be large enough for the writing teacher to accompany the whole class instead of sending a few students to work on their own. In each setting, the key issue is the quality of instructional support available to students while they are writing.

II Collaborative Research on Revision Patterns: In a second action research study, project director Jane Zeni Flinn collaborated with four GWP sixth grade teachers. During a nine month school year, we developed case studies and classroom ethnographic descriptions (Flinn, "Case" and "Programming"). To gather accurate data on revision at the computer, we commissioned special software which records keystrokes and replays a composing session on the monitor. Sixth grade writers, when viewing the replays, could discuss their own revision choices in an unusually clear and articulate manner. Such small-sample qualitative research has been the source of the most significant findings about the writing process during the past two decades, starting with the work of Emig (1971) and Graves (1975). It helped us understand how computers affected the climate of the workshop and the perceptions of young writers.

We also looked at whole-class data, including interviews, writing folders, and revisions of a short story. Two groups had regular access to computers, while two learned a process approach with pen and paper. An analysis of 61 student papers suggested that the crucial variable in revision was not the computer but the teacher. In each class, students revised to improve the

specific writing problems their teachers had stressed.

Among the four teachers, three instructional emphases were identified in the fieldnotes and traced in the writing samples: fluency, word choice, and mechanics. These differences in revision patterns proved statistically significant in a multiple linear regression analysis. Computers promoted no single type, but made revisions of all kinds easier (Flinn, "Role").

Support for Instructional Change

Our teachers face a double challenge when they attempt to implement Gateway training in their schools. Most of them are trying to apply a new technology at the same time as they are trying to apply new techniques for teaching writing. As they experiment, they need continuous, varied support from colleagues, from administrators, and from other resource people at school and university. The Gateway Writing Project has offered such help through regular meetings and conferences for teachers, seminars for administrators, and writing improvement teams at the schools.

Teacher/ Consultant Meetings: Common the the National Writing Project, informal support meetings help newly-trained teachers share problems and solutions. Gateway uses such meetings to help teachers cope with equipment and scheduling as well as curriculum. A different school hosts each meeting, and begins the session by reporting on their program. During the year, teachers see and discuss alternative layouts and teaching plans for computer labs, classrooms, and writing centers.

Gateway also sponsors or shares in the planning of occasional conferences and colloquia where our teacher/ researchers can share their findings with colleagues.

Administrator Seminars: Most English teachers would concur that administrative support is important in making writing a schoolwide priority. With computer-equipped writing programs, administrative leadership is absolutely necessary. Few teachers can buy software, set up labs, or schedule classes without such support. GWP sponsors one-day administrator seminars on "Computers, Writing, and Effective Leadership." The key presentation features a local principal -- often a former English teacher long involved both with computers and with the writing process. Other presenters include a teacher/consultant, a Gateway-trained computer coordinator, and the project director. Administrators who attend often recruit teachers for the summer institute and contract for inservice workshops at their schools.

Writing Improvement Teams: Research suggests that the most crucial focus of staff development is not the teacher, administrator, or school district, but the individual school. So our project has worked with individual pilot schools to design

"writing improvement teams," in-house cadres of computer-and-writing specialists. GWP writing improvement teams require:

one or more administrators who attended GWP seminars,
two or more project-trained teachers,
resource staff (e.g. librarian, computer director, lab assistant),
access to new knowledge (e.g. through a university or technical consortium),
regular planning and meeting time at the school site, and
power to make decisions about writing and computers.

During the FIPSE years we experimented with training and support for these teams. After the teachers' summer institute and the administrators' seminar, we provided a leadership training program in conjunction with an NDN-funded project in the nearby Ferguson-Florissant school district. All members of pilot school teams participated, initially for four days, later requiring just two days. There, the team assessed their school's staff, equipment, and organizational climate, and then wrote an action plan for integrating computers into the writing curriculum. For the two years of development, GWP staff visited pilot schools regularly to observe teachers and students, meet with the writing improvment teams, and offer feedback.

Our four pilot sites represent inner city and affluent suburban secondary schools, creating a natural laboratory for studying computer-rich writing programs.

RESULTS

Each of the three components has helped us understand the impact of computers on student writers. In staff development, the project has fully achieved its goal. The computer is almost transparent in today's GWP workshops, taught through experience and in the context of writing. Research has given GWP a new direction: more of our teachers are involved in classroom action research and publication, and our training is more grounded in the results of our own studies. Support for instructional change has proved to be the most challenging and the most elusive component. Erratic administrative support, competing teacher commitments, staff transfers, and scheduling problems were factors in the uneven performance of the pilot schools and the writing improvement teams.

Staff Development

The GWP computer-equipped summer institute has evolved during the past four years. Each summer our teacher applicants were more computer literate, the staff more experienced, and the lab facilities better. The result of these changes is our current model of staff development.

For example, we began by seeing the computer as an add-on, a new technique added to our usual schedule of writing activities. In 1984, we spent mornings in a seminar room with lectures, teaching demonstrations, and impromptu writing--but no computers. Each afternoon, during our usual writing group, library, and conference time, teachers took an hour's turn in the computer lab down the hall. In part this structure resulted from the university's very limited supply of microcomputers. But it also reflected our own rather tentative view of technology's role in our writing workshops.

During the next summers, we integrated the computer more fully. We learned that physical and temporal arrangements had a powerful impact on learning. By 1986, the institute spent the entire day in a large resource center with computers arranged about the periphery and movable seminar tables in the middle for writing groups; a large monitor made it easy to demonstrate relevant software during the morning's presentations, and an adjacent lab provided more computer access in the afternoons. Such a flexible setting for electronic composing tools helps build communities of writers.

Action Research

Our collaborative research suggests that the computer is a flexible writing tool--not a method of instruction or even a variable promoting revision. How students use computers in the writing process depends largely on how teachers teach. Our research confirms our belief in the importance of good teaching.

It is in the nature of action research to feed back into the enterprise being studied. At each summer institute, we have based a larger number of presentations on the data from our own project. Of course we continue to relate this data to the findings of major researchers elsewhere, but we now have a wealth of material from St. Louis classrooms to confirm their findings or to flesh them out with specific applications. As a result, we feel that we teach with more authority and with more integrity. In addition, we model the excitement of classroom inquiry to future teacher-researchers.

Support for Instructional Change

Teacher/Consultant Meetings: During each of the project years, 5 - 6 teacher/consultant meetings took place between September and June, with generally 10 - 15 project-trained teachers in attendance. Participants tended to be those who had just completed a summer institute or who were involved in action research, along with one or two veterans.

These meetings, and the letters announcing them, was GWP's

principal means for sustaining organizational communication during the schoolyear. For the school -- and the teachers -- hosting one of these meetings, the occasion served as an episode of "peer editing": the school's current computers-and-writing program was shown to fellow teachers at an early stage of development to get informed and collaborative feedback. For the visiting teacher/consultants, these meetings provided new knowledge, served as a "refresher course," a motivator, and a reassurance that others' evolving programs also meet setbacks.

Administrators' Seminars: Since 1985, an annual seminar has been offered on effective schools and teaching writing with computers. Interest in these seminars has been strong enough to allow them to pay for themselves. Most local school districts now have at least one administrator acquainted with the problems and issues facing computers-and-writing programs.

Of course, familiarity with those problems in no way precludes them. Two of the pilot school principals who served as seminar presenters found their own writing improvement teams beset -- by staff transfers and shortages in one case, and by equipment installation delays in the other. Nevertheless, the average level of administrative understanding and support available to Gateway-trained teacher/consultants has certainly been enhanced by these administrators' seminars.

Writing Improvement Teams: Five, quite diverse, pilot sites developed writing improvement teams: (1) A black inner city middle school; (2) A predominantly white middle-income outer-suburban high school; (3) An affluent, predominantly white outer suburban junior high; (4) An integrated, middle income suburban sixth grade center; and (5) a troubled, predominantly black inner-suburb high school.

After the second year, the principal and lead teacher at the affluent junior high (3) were transferred, so this pilot was replaced with the outer-suburban high school (2), which had just gained a new, project-oriented principal.

In every instance, the activities and accomplishments of these teams have been substantial. At the outer-suburban high school, for example, the writing improvement team, with the help of their energetic new administrator, arranged an inservice course for the whole English department (which generated its own book of curriculum materials), a schoolwide before-and-after assessment of writing samples, and a more equitable schedule for writing lab access. This momentum continued: the next year Gateway arranged a writing-across-the-curriculum course for teachers from all departments.

Similarly, at the inner-city middle school, the writing improvement team (two writing center teachers and an

instructional coordinator paid through desegregation funds) worked with a local public relations firm to help students produce a computer-printed newspaper, school publicity, and radio scripts. In both these examples, the involvement of building-level administrators as well as teachers, and the creative use of outside resources, have led to effective integration of computers in the writing curriculum.

Indeed, these writing improvement teams were envisioned as in-house cadres to produce building-level changes in the teaching of writing. Toward that end, intensive leadership training was provided to new writing improvement teams, so that each team emerged with a detailed action plan for altering and perhaps enlarging its school's writing program. The results of this leadership training, team formation, and action-plan development have been quite uneven. Only some of the writing improvement teams came to function as change-oriented cadres; of those, in turn, only some produced much building-level change in school writing programs.

Such a finding should not prove too surprising. After all, the reward structure of public secondary schools provides significant disincentives, without serious positive incentives, for classroom teachers to act as change agents, action researchers, or even as school leaders. The overwhelming majority of teachers will act in these capacities only when it is seriously expected of them by an appropriate building-level administrator; most will perform effectively in these capacities only when the organizational structure of the school facilitates that performance. A good illustration in the prodigious change accomplished by the team at the outer-suburban high school. There, the new principal was herself a former English teacher who had co-directed a computer-equipped writing lab; in addition, a strong departmental structure existed, and once the principal gained the commitment of the English chair, he could organize and guide the other English teachers.

It is, then, perhaps unfair to employ this image of the "change-producing cadre" as the sole standard for assessing the work of writing improvement teams. After all, the concept is rooted in the project's recognition that, since it is the building-level environment that most affects the efforts of a teacher/consultant to put GWP principles into classroom practice, it is building-level support that such an individual most needs. Judged in that light, the writing improvement teams have been quite uniformly successful in providing not only a "critical mass" of like-minded colleagues but also some administrative understanding and regular consultation from staff.

Dissemination

The Project's impact has been far-reaching and rapid. Five

curriculum guides to teaching writing with computers and dozens of articles have reached a wide audience. The program itself has been replicated at an inner-city teachers' college and shared with educators across Missouri and in two foreign countries. FIPSE support played a crucial role in this dissemination. Although project members had been writing and speaking for years, the amount of dissemination and the number of teachers involved in such work increased dramatically during 1984-1987.

During the FIPSE years, the project's geographical influence has spread far beyond the original suburban school districts. The 1987 summer institute included a strong representation from rural and inner city schools, as well as faculty from an American school in Buenos Aires and a multiracial college in South Africa.

We have found that our program has spread more through the reputation of Gateway-influenced schools than through direct promotion. For example, dozens of secondary schools in this area have established computer-equipped tutorial writing labs, most staffed by Gateway teacher/consultants. The two pioneering labs, founded by GWP co-director Anne Wright at Hazelwood West High School, and by GWP program specialist Susan Thoele at Pattonville High School, were named Centers of Excellence by the National Council of Teachers of English. Many schools visit and model their own facilities on these Centers.

Networking has continued to be an important means of dissemination. Gateway teacher/consultants are active on the Board and in the conferences of the Greater St. Louis English Teachers Association. We are in regular contact with the National Writing Project and the Center for the Study of Writing.

Computer conferencing has great potential for helping projects like ours share information and solve problems. From 1984 to 1986, FIPSE's Technology Study Group linked about 75 university projects through a national teleconference. Gateway staff members took part in conferences with such themes as "Composition and Design," "Equity," and "Evaluating Computer Applications." From this teleconference emerged a journal issue (Machine Mediated Learning) and a policy document (see Balestri) as well as an article whose co-authors were separated by 1000 miles (Flinn and Madigan, "Gateway").

In 1986, the project itself was disseminated to Harris-Stowe State College, a historically black institution which prepares most of the elementary teachers for the St. Louis Public Schools. Harris-Stowe has created a GWP joint site with UM-St. Louis; the new venture was supported by a $10,000 matching grant from the National Writing Project and from both colleges. The joint site grew out of a series of successful inservice workshops for the City's Division of Technology. It promises to increase the project's impact on urban students.

Evaluation

The complexity of improving writing in school settings has led us to evaluate the impact of our program at successive levels and with a varity of measures. Our approach to evaluation puts the greatest weight, not on the summer institute, but on the work of teachers and students in classrooms between September and June. Stressing direct methods of evaluation, we looked first at individual student writers, then broadened our view to include the classroom, then broadened again to consider whole schools.

The initial level of evaluation was the student writer. In 1979, before the FIPSE grant, to show that summer institutes improved writing in teacher/consultants' classrooms, we assessed student papers using holistic scoring. A study of 2,816 essays showed significant gains for the students of GWP teachers and earned the project Missouri state validation (Shook, Gateway). Today many school districts here evaluate writing samples annually and report the results to teachers. Another way of evaluating individual student writers is the case study. Our case studies of children writing with computers were conducted as part of a larger collaborative research effort in which many teachers kept data on selected individuals. Unlike quantitative assessments of writing, case studies cannot be generalized. However, sharing the results in the teachers' meetings helped us to discover issues of general agreement which could then be applied to the next round of training.

Because computers had so sharply changed the "culture" of our own writing workshops, we soon extended GWP evaluation efforts to a second level of analysis, the school classroom. Here our methods have been ethnography and participant observation. Our 1984-85 collaborative classroom research project taught us that the teacher, not the computer, is the dominant force in the instructional climate. In addition, it helped us to see that the physical layout of classrooms and labs is crucial to the success of computer-rich writing instruction.

Our third level of evaluation was designed to study the school building as a locus for educational innovation. The Gateway staff, including sociologist George McCall, has guided writing improvement teams through a process of planning and self-evaluation. We found that staff involvement at our pilot schools has been strong and varied -- teachers, administrators, librarians, computer coordinators, lab assistants. All five pilot sites developed active, computer-equipped writing labs and at least some classes that emphasize the writing process. But we also found that many factors affect a teams's impact on the school: the principal's commitment to district goals for writing, computers, or both; the leadership of a chair or language arts committee; the GWP teachers' status in the

building; and the cohesiveness of the writing staff.

What we learned through evaluation at all three levels has been applied to revise and improve our training. For example, when we saw how the computer's physical setting could affect a writing environment, we began stressing classroom design. When we saw that librarians could improve access to computers, we added them to writing improvement teams.

We have revised our training model much as writers revise papers: through collaboration, feedback, recursion, and successive approximation. What we learn from collaborative observation of students, teachers, classrooms, and teams feeds back into the training as we continue to revise it.

Although formative evaluation has been absolutely central to our program-revision cycle of planning, implementation, and feedback, summative evaluation has also played a part. Summative evaluation has been "user-focused": GWP staff worked with the writing improvement teams to help each team design an evaluation of its own impact. The results might be used to further influence change. The teams varied considerably in the breadth and rigor of their evaluation efforts.

Overall, the pilot effort has been worthwhile. We have incorporated the main features of the writing improvement team training into our summer administrators' seminar and into the last week of the summer institute for teachers. In this way, we plan to continue working with building-level programs of computers and writing and to continue refining our model.

Continuation

The Gateway Writing Project's role at UM-St. Louis is now reasonably secure. Funding and staff have been budgeted by the Extension division and planned by the English department, and two GWP-based courses are listed in the catalog.

Beginning in 1986, Extension hired a GWP teacher/consultant part time as a "program specialist" to promote and arrange inservice workshops; this position has been increased to 60% FTE. A catalog of GWP offerings has been jointly published with Harris-Stowe State College and distributed to all area schools As a result, Gateway inservice programs tripled in three years. Secretarial support is provided by Extension and by the English department. In addition, the College of Arts and Sciences agreed to fund the Gateway co-director from the public schools at $4,000. Gateway has been written into the English Department's Five Year Plan with an annual budget of $50,000.

In part, this institutional support resulted from the FIPSE and National Writing Project funding. Equally important

was the arrival in 1986 of a new Chancellor at UM-St. Louis who has named service to the urban community and to its schools as her highest priority. She inaugurated an ambitious and heavily grant-funded "Partnership in Progress" with the St. Louis Public Schools, and she publicly endorsed the Gateway Writing Project. This administrator's impact brings closer to home our GWP seminar's stress on administrative support for writing programs.

At the same time, we have worked through departmental systems to institutionalize the project's activities. Both the summer institute and an upper-level open admission course are now cross-listed under English-Education in the university catalog. The administrators seminar is offered noncredit via Extension. Writing improvement teams are introduced in the administrators' seminar and the summer institute, and further training can be arranged for individual schools on a consulting basis.

The project's impact on undergraduate writing programs has been small but promises to grow. The major drawback has been the shortage of microcomputers available to writing classes. Although UM-St. Louis has several open labs, it is not yet possible for an instructor to schedule a lab regularly--as is customary at many high schools where Gateway teacher/ consultants work. The English department, under the leadership of a new, computer-oriented composition director, is now actively seeking support for a properly-equipped writing classroom.

Since Gateway's director also heads the English-Education program, the project has considerable impact on preservice teacher training. The Methods course now schedules several classes in the computer classroom, where future teachers can try out word processing for model lessons. Gateway's library reserve collection is well-used by preservice teachers, many of whom later apprentice with GWP-trained cooperating teachers.

CONCLUSIONS

Since 1984, the Gateway Writing Project has developed a successful model for integrating computers into staff development in the writing process, for guiding teachers through the challenge of classroom research and publication, and for working with writing improvement teams to support instructional change in the schools.

Experience confirms our view of the computer as a tool, not a treatment. As our workshop model evolved, the technology became more transparent and the focus remained on writing and on teaching. We recognized the need to design a total learning environment for writing with computers. Problems of access, layout, and assistance can sabotage the benefits of electronic writing tools. Finally, we learned about the complexity and the challenge of planning effective support for school change.

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